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ABSTRACT

This manual presents an assessment instrument designed to help teachers, educational specialists, speech-language therapists, psychologists, and other service providers evaluate the communication skills of children, adolescents, and young adults who have multiple disabilities, including severe or profound mental retardation and deafblindness. It offers a qualitative approach to characterize the forms, breadth, and attributes of an individual's communication behaviors when speech may or may not be present, and provides a process that links assessment results to intervention planning. There are two parts to the instrument. "Part I: Developing a Communication Profile," provides a scale that may be used to rate six specific qualities, or dimensions, of expressive and receptive communication behaviors. Part 1 allows evaluators to generate a broad profile of an individual's communication skills and behaviors. "Part II: Designing an Intervention Plan," is designed to be used to develop appropriate communication goals for the individual, based upon the ratings obtained in Part 1. Its usefulness is enhanced by numerous examples and descriptions of goals and interventions that can be considered for application in the school, community, and home. The manual includes a case illustration and a recording booklet containing forms and guidelines for recording information obtained during the evaluation. (CR)

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Dimensions of Communication

Part I: Developing a Communication Profile
Part II: Designing an Intervention Plan

An instrument to assess the communication skills and behaviors of individuals with disabilities

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Our Purpose

The Dimensions of Communication is an assessment instrument designed to help teachers, educational specialists, speech-language therapists, psychologists, and other service providers evaluate the communication skills of children, adolescents, and young adults who have multiple disabilities, including severe or profound mental retardation and deafblindness.

This instrument may be especially useful when standard language tests are not applicable. Many standard tests presume that the individual to be assessed has developed the use of speech and, consequently, has acquired basic linguistic skills and knowledge. Such tests, however, may not measure the communicative competence of persons with disabilities, who may use alternative means of expression, like gestures, vocalizations, or signs. The benefits of the Dimensions of Communication are twofold:

- It offers a qualitative approach to characterize the forms, breadth, and attributes of an individual's communication behaviors when speech may or may not be present.
- It provides a process that links assessment results to intervention planning.

The development of this instrument was based on the findings of an observational research study of the communication behaviors of 103 children and adolescents with severe disabilities, ranging in age from 3 to 15 years (Mar & Sall, 1999). Thus, although the Dimensions of Communication can be applied to individuals who have sophisticated language skills, it was designed primarily for the assessment of persons whose communication behaviors are basic, nonconventional, and/or nonsymbolic. This instrument may also be appropriate for individuals older than those identified in the research study.

There are two parts to this instrument. Part I: Developing a Communication Profile provides a scale that may be used to rate six specific qualities, or dimensions, of expressive and receptive communication behaviors. Part I allows us to generate a broad profile of an individual's communication skills and behaviors.

Part II: Designing an Intervention Plan may be used to develop appropriate communication goals for the individual, based upon the ratings obtained in Part I. Its usefulness is enhanced by numerous examples and descriptions of goals and interventions that can be considered for application in the school, community, and home.

What are Dimensions of Communication?

Communication refers to how people convey and understand messages. We can describe a person's communication skills in several ways. Often, we think of the forms of communication, such as speech or sign language. Or we might consider the functions of communication, such as making a request or indicating a need. But there are other natural characteristics, or "dimensions," of communication, as well. For example, an act of communication might be simple, consisting of a single word, or it may be complex, such as lengthy dialogue. Communication can be intentional, as when one greets another person, or nonintentional, as when one reacts to a painful sensation. It can involve the use of symbols, such as words, or behaviors that are not symbolic, like gestures and facial expressions.

It is possible to analyze various dimensions of communication in order to achieve a broad picture of a person's communicative competence. We have selected six dimensions, based on the findings of our study (Mar & Sall, 1999) as well as their recognition in the literature as essential components of communicative competence for persons who have severe disabilities (e.g., Wetherby, Warren, & Reichle, 1998). The six dimensions defined and described in Part I: Developing a Communication Profile are listed here:

- Symbol Use
- Intent
- Complexity
- Social Action
- Vocabulary Use
- Comprehension

Each of these dimensions places emphasis on a particular social or cognitive aspect of communication. However, you will note similarities and overlap among some of the dimensions, as well as the behaviors that exemplify them. This is because communication is the result of many processes that are not truly independent of each other.

Vocabulary size or mean length of utterance may be measured and counted. Dimensions of communication are not quantifiable in such ways; however, they can be described according to the degree to which a particular quality is evident in the individual's communication behaviors. Each of the six dimensions in Part I: Developing a Communication Profile can be described along a continuum of 1 to 5, which ranges from (1) physical reactions to (5) sophisticated communication skills. We have assumed that, within this range of communicative competence, even the most basic behaviors have communicative value.

Overview of this Manual

This manual guides you through a five-step process that begins with the assessment of an individual and culminates in the development of an intervention plan uniquely suited to that individual. This assessment-to-intervention sequence is shown in the figure on page 5. Before you begin the assessment, it is expected that you will have some familiarity with the individual's communication behaviors. To gain a sense of specific skills and abilities, you might first review educational records or speak with teachers and parents.

Part I: Developing a Communication Profile involves the first three steps. *Step 1* (page 7) entails the gathering and recording of information about the individual's communication behaviors through observations, interviews, and structured interactions. Communication behaviors should be "sampled" across a variety of environments and activities, since it is important to have multiple sources of data. In *Step 2* (page 12), you will use this information to rate the individual's behaviors for each of the six dimensions. You will then obtain a total score of communicative competence. In *Step 3* (page 13), you will generate a descriptive communication profile of the individual.

Part II: Designing an Intervention Plan consists of two additional steps to directly link the individual's communication profile and ratings to interventions. In *Step 4* (page 29), a scoring index will help you relate an individual's total score of communicative competence to one of five intervention sets. In *Step 5* (page 30), you may review the sets to identify and modify relevant communication goals and activities that will meet the individual's interests and needs.

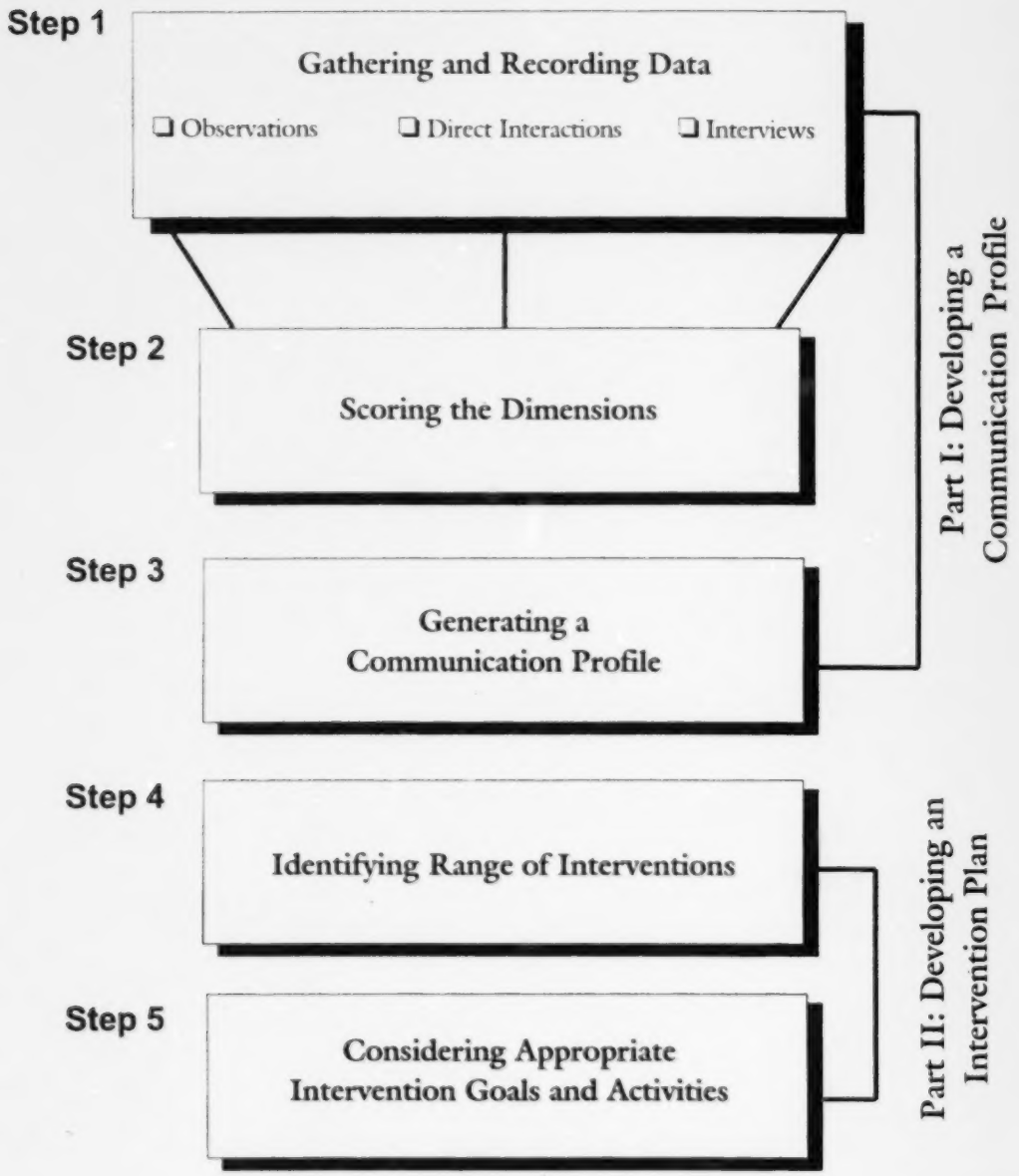
In the Case Illustration (page 55) you will find a complete example of all five steps. The example includes actual data on a student with deafblindness and multiple disabilities. These data were obtained through observations, interviews, and a structured interaction. We have highlighted helpful hints for recording and reviewing the data.

The Dimensions of Communication Recording Booklet (at the back of this manual) may be used with parts I and II. This booklet contains forms and guidelines for recording information obtained during observations, interviews, and structured interactions. The booklet is used to record the ratings for each dimension, the total score of communicative competence, and the individual's communication profile. It also includes the scoring index.

You may use this instrument working singly or as a member of a team. Team members may organize the evaluation in a variety of ways. For example, two evaluators working together during a structured interaction might divide their responsibilities so that while one practitioner elicits

behaviors from the student, the other practitioner records the behavior. In another option, one practitioner may conduct an interview while the other observes the student. It is important that members of the team clearly understand their responsibilities during each step. When using a team approach, the process must go beyond data collection to also include scoring the dimensions, generating a profile, and so on.

Assessment-to-Intervention Sequence



Administration of Part I - *Developing a Communication Profile*

Step 1: Gathering and Recording Information

What you will need:

Observation Form, Structured Interaction Form, and Interview Form from Recording Booklet.

What you will do:

Observe and interact with the individual. Conduct an interview to obtain information regarding communicati on skills and behaviors.

How long it will take:

Approximately 1½ - 2 hours

Step 2: Scoring the Dimensions

What you will need:

Dimensions of Communication charts from the manual; Score Sheet from the Recording Booklet.

What you will do:

Identify examples of individual communication behaviors as they relate to each of the six dimensions. Rate the student's communication behaviors on each of the six.

How long it will take:

Approximately 20 - 30 minutes.

Step 3: Generating a Communication Profile

What you will need:

Completed data sheets from the Recording Booklet; examples of individual behaviors from the Score Sheet; additional raw data from observations, interactions, and interviews; blank Descriptive Profile Form from Recording Booklet.

What you will do:

Write a synopsis of the student's communication skills and behaviors using all of the information collected during observations, interactions, and interviews.

How long it will take:

Approximately 30 - 40 minutes.

Step 1: Gathering and Recording Information

Our purpose is to develop a profile of the individual's communication skills and behaviors. For this assessment, data are gathered as follows:

- *Observations* of the individual during typical daily routines and activities.
- *Interviews* conducted with people who are familiar with the individual.
- *Structured* interaction during which you will engage directly with the individual.

Planning is a very important part of Step 1. It will save you time and effort to determine in advance exactly when, where, and how you will gather information. Discuss with key persons what opportunities exist for collecting data. Observations, interviews, and structured interactions may be sequenced in any order that makes the best use of available opportunities.

Before you begin gathering information, familiarize yourself with each of the Dimensions of Communication charts in this manual. You may also refer to the Case Illustration to see what type of information is gathered and how it is recorded. Your plan of action may follow these steps:

- *Develop a schedule* for conducting your observations, interviews, and structured interactions. Use the cover sheet of the Recording Booklet to list times and opportunities for each session.
- *Review the guidelines* on the following pages for how to conduct observations, interviews, and structured interactions.
- *Review the recording procedures*. They provide specific instructions for recording information obtained during your assessment.
- *Conduct observations, interactions, and interviews*. Depending on the amount or quality of information obtained during these sessions, you may wish to conduct additional observations.
- *Record the information* as you conduct each session. Examine the recording forms in the Recording Booklet before you conduct the assessment. These are the forms to use for recording information obtained during observations, interviews, and structured interactions.

Guidelines for Conducting Observations

- Observe the individual in settings where there are natural opportunities for communication and social interaction. Informal activities often allow for more interaction and communication than many formal instructional activities. Recess, small group classroom activities, walking in the hallways, or shared computer activities may provide more information than independent study or traditional classroom instruction.
- If the individual shows little or no engagement or interaction, you may need to plan another observation or extend the observation period.
- Observe a broad range of activities and environments that are typical of the individual's daily routine, including transitions between activities.
- Observe the individual interacting with several different communication partners.
- Avoid conducting observations during individual instruction (e.g., resource room, occupational therapy, counseling, mobility instruction, or speech-language therapy).
- Depending upon the opportunities available for conducting observations and the settings in which you observe the individual, you may decide to conduct a series of shorter (e.g., 10-minute) or longer (e.g., 30-minute) observations. You may also observe the individual participating in more than one activity during your observation time (e.g., in the classroom, hallway, and lunchroom).
- Allow a total of 50 to 60 minutes of observation time across settings.
- Observations may be done in one day or in more than one day.
- As an observer, you should be discrete so that you do not interfere with ongoing activities. However, if the individual directs behaviors or comments toward you, you should observe and record them.

Guidelines for Conducting Interviews

- First, determine which persons are most appropriate to interview (e.g., parent, teacher, paraprofessional, or therapist who is familiar with the communication skills and behaviors of the individual). Conduct at least one interview. You may wish to interview others to obtain a broader range of information about the individual.
- Plan on spending at least 30 minutes when conducting an interview.
- Interview questions should focus on the forms, functions, and qualities of the individual's communication and interaction skills. On the recording forms (see Recording Booklet), you will note that several interview questions have already been listed. These are intended to provide "starting points" for your interviews. However, you may need to add to or change the questions in order to obtain information about the specific behaviors of the person you are evaluating. Examples of questions to ask include the following:
- What are the individual's major forms of spontaneous communication (e.g., direct behaviors; vocalizations)? Provide several concrete examples (e.g., pushes teacher's hand away to indicate disinterest; says "mmm" when hungry).
- What are the various ways in which the individual indicates needs, interests, and preferences? Dislikes or disinterest? Desire for help? Physical states, such as hunger, pain, or fatigue?
- Does the individual combine words, signs, symbols, or gestures (e.g., produces three-word utterances; points to two pictures in sequence)? Obtain several examples of such combinations.
- Describe how the individual interacts with others (e.g., response to greeting, turn-taking skills, initiation of interaction, ability to engage in conversation, awareness of the presence of others).
- How extensive is the individual's vocabulary? Describe the number and types of words, pictures, gestures, signs, object cues, and other symbols/behaviors that have specific meaning for the individual.
- Provide several examples of the individual's receptive communication skills. Does he or she respond to commands or directions? What must you do or say in order to be certain that the individual understands you?
- Describe the types of symbols (pictures, photos, signs, three-dimensional objects, tactual signs) the individual uses. Provide examples.
- Use the interview as an opportunity to obtain information about communication goals for the individual, and the effectiveness of current interventions.

Guidelines for Conducting Structured Interactions

- The structured interaction gives you the opportunity to work one-to-one with the individual. In some cases, the presence of another person might be required (e.g., interpreter, aide) to help you communicate directly with the individual.
- Select a setting that allows for uninterrupted and comfortable structured interaction with the individual (e.g., separate area of classroom, empty room).
- Use the structured interaction as an opportunity to elicit specific communication behaviors from the individual. Focus on the individual's social interest and ability to take turns, follow directions, initiate or respond to an interaction, express interests or disinterests, etc.
- Plan a sequence of meaningful activities that are age appropriate and may be of interest to the individual. The structured interaction should be informal enough for you to be flexible while engaging the individual in stimulating activities. Examples of materials that might be considered for use during the interaction session include the following:
  - musical items (e.g., whistles, shakers, drum sticks, tambourine)
  - functional objects (e.g., hairbrush, spoon, cup, toothbrush, pen, mirror)
  - puzzles and simple games
  - drawing and writing materials
  - tactual or multisensory materials (e.g., different textured or vibrating objects)
  - switch-operated objects (e.g., fan, blow-dryer, cassette player)
  - wind-up toys
  - pictures (e.g., photographs or line drawings of people engaged in various daily activities, pictures of food or clothing items)
- Speak with a parent, teacher, or other person who is familiar with the individual being evaluated to solicit ideas regarding appropriate materials for the structured interaction.
- Allow up to 30 minutes to conduct a structured interaction.

Recording Procedures

- Use the forms in the Recording Booklet to record information obtained during observations, interviews, and structured interactions. Use separate forms for each session. You may need to use additional sheets of paper.
- Briefly describe the social and physical environment for each session (e.g., location and setting, time of day, materials used, presence of others, type of activity, etc.).
- Record the activities, events, dialogue, and behaviors as they occur during the session. Try to write down exactly what the individual says or does. Note the events occurring just prior to and after the response.
- All forms of the individual's behaviors, even those that are not directed toward another person, should be described (e.g., physical reactions, body movements, vocalizations, self-stimulation, repetitive behaviors).
- Use of a tape recorder during interviews and structured interactions may be very helpful.
- Provide as much detail as possible. It is better to make objective statements than to interpret behavior. For example, "John stood up and threw his cup across the room" is more objective than "John became angry and threw his cup across the room."
- Before starting the evaluation process with the individual, you may want to conduct a practice observation or interview to obtain a better sense of the data gathering and recording process.

Step 2: Scoring the Dimensions

In Step 2, you will rate the individual's communication behaviors from each of the six dimensions. As you review the dimensions in this manual (pages 15 to 27), you will note that there are five levels of competence for each, ranging from basic (Level 1) to complex (Level 5) skills. You will determine what level of competence best corresponds to the individual's skills. An example of Step 2, which illustrates the scoring procedures, can be found in the Case Illustration (on page 67).

- *Review the data* collected from the observation, interview, and structured interaction forms.
- *Identify actual examples* of behavior that reflect the dimension you are rating. These examples will serve to justify or illustrate your rating, and therefore, should be representative of the individual's communication behaviors. List these examples on the Score Sheet of the Recording Booklet.
- *Circle the level (1-5)* on the scoring sheet that corresponds most closely to the individual's communication behaviors.
  - Compare your examples with the description of the rating and the list of examples for a given dimension provided in this manual.
  - Circle only one level, even if you have difficulty deciding between two different ratings (e.g., Level 2 or Level 3). Complete the ratings for all six dimensions.
  - Make your rating on the basis of the majority of the individual's communication behaviors, focusing on those behaviors that are most typical. Keep in mind that you are not necessarily rating the highest level of behavior observed, but the level that is ***most characteristic*** of the individual.
  - Some difficulty in selecting a level, for example between levels 2 and 3, has been taken into consideration in the design of the scoring index. There is some inherent overlap between levels.
- *Compute the total score*, which is the sum of the six levels. A total score can range from 6 to 30. (This score will be used later for Part II: Designing an Intervention Plan.) You may notice variation in levels between dimensions for the individual you are evaluating (e.g., the dimension of Symbol Use may be rated at Level 2 while the dimension of Social Action may be rated at Level 3). This kind of variation is to be expected.

Step 3: Generating a Communication Profile

In Step 3, you will write a cohesive summary or profile of the individual's communication skills and behaviors. This profile will provide a rationale for selecting and designing intervention activities. It can also be used as part of an evaluation or progress report. An example of a written communication profile appears in the Case Illustration (on page 68).

- *Synthesize the examples* of communication skills and behaviors identified in Step 2 (listed on the scoring sheet).
- *Integrate additional information* obtained during observations, interviews, and structured interactions, as well as from other sources (e.g., previous reports or evaluations).
- *Write the communication profile* directly into the Descriptive Profile Form in the Recording Booklet. Include in your profile a description of the individual's skills and behaviors with respect to the six dimensions. Use this as an opportunity to focus on unique communication behaviors versus the individual's deficits or lack of skills.

Dimensions of Communication

- Symbol Use
- Intent
- Complexity
- Social Action
- Vocabulary Use
- Comprehension

Symbol Use

The use of symbols refers to a person's ability to communicate with representations. Symbols can be in the form of signs, icons, words, tangible objects, raised-dot patterns, pictures, or other kinds of codes in any modality (e.g., speech, print, tactual, sound). They are representations that stand for objects, persons, concepts, and events.

Individuals differ in the degrees to which they use symbolic forms of communication. Most of us rely on a formal language to communicate with each other. That is, we communicate using speech, printed words, signs, and/or other conventional symbols. Others, however, rely on behaviors, such as gestures, vocalizations, and direct actions. Because such behaviors are nonconventional, we often must interpret the meaning of the "message" based upon the situation or our familiarity with the individual.

This dimension of communication also reflects the degree to which the individual can use symbols, regardless of their form, to represent abstract concepts. At basic skill levels, symbols are used primarily to represent concrete and tangible objects, persons, needs, and events of the moment. As one's skill level increases, symbols can also be used to represent past or future events, feelings, relationships, categories, properties, and values.

Level	*Examples of Behavior*
1 *Reactions* or reflexes that must be interpreted.	• smiles when cheek is stroked or back is rubbed • says "ahh" when hungry or bored • moves arms in excitement when a familiar person enters the room • grimaces when being physically moved • clutches spoon or musical shaker when placed in hand
2 *Nonsymbolic* actions, gestures, or vocalizations that relate to immediate needs or interests in the environment. Specific behaviors must be interpreted, as they are mostly nonconventional or idiosyncratic.	• uses hands to search for toy on table • waves good-bye when leaving the room • makes gesture that resembles "more" to request more juice • touches cup, picks it up, and brings to lips • turns doorknob to indicate desire to leave room • pushes away puzzle when bored • shouts or screams when peer attempts to take away book

Level	*Examples of Behavior*
3 *Concrete*, conventional symbols used to label common objects, persons, needs, simple events, and basic actions. Symbols can be readily understood by familiar and unfamiliar persons.	• signs single words (e.g., "more," "go," "eat," "no") in appropriate context • points to picture symbols that represent activities (e.g., computer; lunch) • calls out names of familiar people • labels common objects (e.g., cookie, truck, pencil, wheelchair, glasses) • hands teacher object cue (e.g., CD) to indicate desire to listen to music • makes simple comments about the here and now (e.g., "man running")
4 *Extended* symbol system that represents a primary form of communication (e.g., sign, speech). Limited ability to symbolize abstract concepts is apparent.	• asks about person who is not present • makes comment about favorite TV show • uses different words to convey same idea (e.g., "I want a drink"; "I'm thirsty") • uses several familiar category names (e.g., fruit, animal, clothing) • describes physical properties of objects (e.g., shiny, hard, round, heavy, empty) • labels some basic feelings, characteristics, reactions (e.g., scared, silly, angry)
5 *Abstract* ideas and concepts are represented symbolically. Reference is made to the past and future.	• talks about morning routine (e.g., "I ate breakfast and then I watched TV") • uses signs to express and discuss abstract feelings (e.g., anger, fear, excitement) • discusses things from the past (e.g., something that happened last week)

Intent

Communication is intentional when one's behavior is produced for the purpose of gaining attention, responding, conveying a message, or expressing a need or interest. Communicative intent can be viewed as social cause-and-effect in that one understands that his or her own behavior (cause) will affect another person in some way (effect).

Communicative intent can be described by the degree to which an individual deliberately signals or directs behaviors to another person. It can be expressed in a variety of verbal and nonverbal forms. For instance, an individual may use certain behaviors (e.g., eye contact, gesturing, tugging, crying) without clear intent but, nevertheless, receive attention. Other behaviors (e.g., shouting, throwing) may be intentionally produced, but are not necessarily directed toward a particular person. Intentionally communicative behaviors, on the other hand, are produced with a goal in mind, such as getting one's turn in a game or gaining a peer's attention. The individual may be persistent in signaling others until the goal is reached.

Level	*Examples of Behavior*
1 *Reactive* or reflexive behaviors, elicited without calling for attention. Intent is not present.	• cries when physically uncomfortable • smiles when music is played • eyes widen when new activity begins • vocalizes softly when others are present
2 *Preintentional* behaviors, in which one generally understands that his or her actions will be followed by a response. Behaviors are not deliberately directed to specific individuals.	• shouts to gain attention from peers • bangs on radio to get someone to turn it on • reaches toward ball to indicate interest or preference • vocalizes loudly when wants to take a rest during activity • makes a sign when thirsty but to no one in particular • says "help" to open the door of the toy cabinet

Level	*Examples of Behavior*
3 *Basic intent*, indicated by the ability to deliberately signal another person to convey needs or interests, with the expectation of a response from that person.	• tugs on teacher's sleeve to get attention • presents tangible symbol to request an activity (e.g., baseball) • looks directly at peer who is giving out snack and signs "more" • wheels toward teacher and raises arms to be lifted out of wheelchair • calls out a classmate's name in attempt to find her in the lunchroom • greets peer who enters the room
4 *Goal-directed* communication. Individual shows persistence in signaling others and/or may use different means or approaches to gain attention or reach goal. The purpose of the communication is specific and clear.	• raises hand to answer question, but when no attention is given, calls out answer • asks peer if she is getting ice cream for snack at lunch time • repeatedly tells classmate to stop pulling his arm and then moves away • orders French fries at the counter of a fast-food restaurant • begs parent to allow her to wear favorite shirt • signs to several different peers working on the computer to request a turn
5 *Planful* communication, reflected by the ability to adapt one's approach, based upon social cues and feedback from others. Communication behaviors are socially appropriate to the context. Goals may be long term, such as planning of future events.	• initiates telephone call with a friend and asks friend to meet later • asks supervisor for directions to complete a required task • waits until parent is in a good mood before asking for new sneakers • knows to ask art teacher for certain materials to do a special project • joins in group conversation and offers relevant remarks • changes tone of voice and body language when ignored

Complexity

In typical language development, the transition from single-word utterances to word combinations is viewed as the emergence of syntax. For present purposes, complexity refers to the ability to combine symbols according to rules of syntax or to sequence behaviors in meaningful ways to convey messages. This dimension can be likened to "length of utterance" in which the combining of symbols or behaviors serves to expand upon a subject.

A communication behavior or utterance may be simple, such as when one produces a single word or sign to make a request. In contrast, it may be represented by a combination of words. For example, a two-word combination may connect an object to an action (e.g., "boy runs") or specify a certain relationship (e.g., "my book"). More complex constructions, such as multi-word sentences, reflect the understanding and use of grammatical rules to comment on the relationships among persons, objects, and events.

Level	*Examples of Behavior*
1 *Physical reactions* in response to stimuli.	• fusses while sitting at lunch table and then quiets when food is presented • grimaces or twitches when moved into an awkward or uncomfortable position • blinks when object falls and makes loud noise • smiles, vocalizes, and reaches out when preferred object is in view
2 *Single actions* in which one word, sign, behavior, or gesture is used to convey an idea.	• waves arm at teacher to indicate desire to continue an activity • says "bye-bye" when getting ready to leave • gives tangible object cue of basketball to peer to show interest in playing • signs "more" when finishes snack • presses single picture key on augmentative communication device

Level	*Examples of Behavior*
3 *Simple combinations* in which two or three symbols are combined to produce a simple message or a single idea.	• lifts up cup and says "more juice please" • signs "baby cry" when sees infant crying • walks over to door and says "go home" • pulls chair away from another person and says "my chair" • points to two picture symbols in sequence to indicate "music finished"
4 *Short combinations*, represented by 3-to 5-word sentences that follow basic rules of grammar and syntax, and can extend an idea or provide more detail.	• points to photos on communication board (burger, fries, soda) to order lunch • signs "work finished, want break" • says to teacher "I put train over there" and points to toy closet • yells "Give me the mouse!" when working with peer on the computer • asks "Where's Sarah? She go home?"
5 *Complex constructions* that reflect the ability to produce elaborate sentences. Use of linguistic forms involving tense, prefixes, suffixes, connectives, and other grammatical complexities is evident.	• relates to teammate, "I went home early because I was hungry." • calls to friend, "Hey Ruben, sing that Spanish song again." • elaborates (e.g., "I missed watching it on TV. I was so upset.") • uses braille writer to type out story that includes past as well as future tenses • uses connectives (e.g., "I would have gone if Mark was going to be there.")

Social Action

Social action refers to the ability to socially engage or respond to another person. It is reflected by the degree to which one can participate in the reciprocal, give-and-take process of an interaction. Participating in a conversation, in which there is an implicit understanding of turn taking, sequence, and sharing of information, is a primary example of social action.

The salient quality of social action is that one's behaviors serve to establish or maintain direct communicative contact with another person. Social actions can be extensive, such as in a lengthy conversation, or relatively brief, such as waving hello or goodbye. In its simplest form, social action can be thought of as a response (e.g., smile) to a social stimulus (e.g., greeting). Other forms of social action include game playing (e.g., knowing when to take a turn) and performing steps of social routines (e.g., shaking hands with others in a room).

Level	*Examples of Behavior*
1 *Orients* or produces a general reaction or response to social stimuli.	• vocalizes "ahh" when hearing familiar voice • smiles when sees or hears a peer approach • moves body in response to being lightly touched by teacher • turns head when music teacher stops singing
2 ***Simple social actions*** to respond to or initiate an interaction with another person.	• signs "hello" to teacher and shakes hands • points to picture cue of "juice" when asked what he wants to drink • smiles and walks over to teacher's desk when requested • yells "come here" to get the attention of peer walking past the door • nods head to indicate "yes" when asked if thirsty

Level	*Examples of Behavior*
3 *Extended social actions* to continue a communicative exchange. An interaction can go beyond a simple initiation-response sequence.	• takes turn with classmate when playing with basketball during recess • taps peer and shows her a book, then makes gesture to give it to peer • gives hair clip to friend after the friend approaches and looks at it • approaches teacher and then signs, "Eat now?" • lets classmate examine special pen, then seeks to retrieve it
4 *Brief interactions*, such as short conversations and turn-taking sequences over short periods of time. There is interest and ability to sustain interactions.	• asks peers a few questions about a game, then asks, "Can I play with you?" • asks teacher, "What are you doing?" and then asks, "Why?" • tells classmate that they can take turns working on computer together • shares a few comments about going to a movie • answers several questions to indicate choices at a fast food restaurant • responds to two or three questions about building a model airplane
5 *Conversant*, or has the ability to engage appropriately in a prolonged social interaction or conversation.	• waits turn to join in conversation without interrupting • maintains conversation with peer by asking relevant questions • engages in discussion with peers about making plans for the weekend • invites a third person, who is just watching, to join in a card game • participates in a classroom debate and offers opinion

Vocabulary Use

This dimension is defined by the degree to which an individual can express needs and interests using appropriate words, signs, or communicative behaviors. Vocabulary use reflects, in part, size of vocabulary. The more central concept, however, is how well the individual applies or selects vocabulary or communication behaviors from his or her lexicon or repertoire to correspond to the object, person, need, or event.

At basic levels of communicative competence, vocabulary is not differentiated. That is, the individual may use a general behavior, such as a vocalization, to express most or all needs. Differentiation is apparent when the individual's words, signs, or behaviors more specifically correspond to the situation (e.g., clapping hands when excited, using a person's name to gain attention, labeling an object). The individual has learned the associations between words or signs and their referents, and uses the words with consistency when referring to particular objects, persons, actions, etc. Within this dimension, individuals who are communicatively competent can use their extensive vocabulary to provide detailed descriptions and to articulate their thoughts.

Level	*Examples of Behavior*
1 *Nondifferentiated* physical actions or vocalizations expressed in regard to several types of stimuli.	• moves arms when someone approaches • moves arms when music is played • moves arms when bright light is turned on • moves arms when given food
2 *Differentiated* behaviors such as using different gestures or vocalizations to convey needs or preferences.	• says "yes" or "no" when asked if interested in joining a specific activity • makes gesture for "drink" which is slightly different from gesture for "eat" • uses category name (animal) to represent several exemplars (horse, dog, bear) • points to picture of book on communication board to indicate desire for item • vocalizes different types of sounds to indicate likes and dislikes

Level	*Examples of Behavior*
3 *Functional vocabulary*, in which particular words or behaviors are appropriately and consistently used to refer to unique objects, persons, or situations. Indicates desire for specific things by name.	• signs "cookie" instead of simply "more" to make request during snack • indicates interest in activity by making a choice using tangible object cues • always says "zah" to signify "pizza" • calls individual people by name (e.g., "Mr. Green," "Franny") • presses picture cue "cassette" on augmentative device to indicate desire for music
4 *Precise* use of vocabulary, in which there is a closer correspondence between words used and the objects, persons, events to which they refer. Able to communicate about subtle differences, provide information, and offer descriptions.	• uses exact names to indicate need for specific items (e.g., glass versus cup) • describes environmental contexts or situations (e.g., "It's dark in here.") • provides distinct answers (e.g., "turkey" when asked "What did you eat for lunch?") • provides elaboration ("A car") when initially misunderstood ("I saw a red bug") • says "marker" (instead of "pen") to indicate choice of specific drawing tool
5 *Extensive* vocabulary use, such as the ability to communicate about different aspects of an event. Can relate ideas directly to a topic, even when out of context (e.g., things happening in the past or future).	• changes the complexity of a sentence when talking to a younger child • talks about visiting a farm and feeding the different animals over the weekend • describes what different children did at a carnival, the rides, and the food • makes detailed comments about the school day ("Today in math I learned...") • describes elaborate plans for a birthday party (type of cake, food, games) • clarifies regional differences in signs when questioned by communication partner

Comprehension

Comprehension refers to the ability to understand what someone else communicates through behavior or language. Comprehension is observed when an individual's response or communication behavior (e.g., replying, "I'm fine.") is relevant to the social event that preceded it (e.g., being asked, "How are you?"). At a very basic level, "comprehension" might be seen in the form of general interest in (or responsiveness to) the interactions of others. At another level, it might be exemplified by the ability to follow a simple direction or to answer a concrete question. Understanding a lecture or the news reflects comprehension at a sophisticated level.

Level	*Examples of Behavior*
1 *Awareness* or responsiveness when another person begins or ends an interaction.	• pauses or quiets when approached • vocalizes when peer shows a toy • opens mouth when presented with spoon • turns head when loud noise is made or when name is called
2 *Simple response*, given the availability of physical cues provided by another person. Cues must be tied to an immediate context in order for individual to understand.	• cries when parent says "good-bye" and leaves the room • gestures toward ball when asked, "Where is the basketball?" • stops reaching for toy when teacher says, "All done" • given cup and book, reaches for cup when asked, "What do you drink with?" • shakes head "no" when asked if she wants more during a meal
3 *Basic comprehension*, such as understanding simple commands, one-step instructions, and answering concrete questions.	• points to trash can when asked, "Where does this garbage go?" • performs hand and body movements during "Simon Says" game • responds appropriately when teacher says or signs, "Give that blue book to me." • follows steps for ordering food (e.g., waiting in line, selecting food, paying) • when "clean-up time" is called, turns off and puts away cassette player

Level	*Examples of Behavior*
4 *Complex response*, in which individual comprehends specific and complex requests, questions, and conversation.	• follows multi-step directions to put away balls and line up at the gym door • understands directions on finding items in grocery store (e.g., aisle 2, top shelf) • understands steps required to turn on, access, and run computer game • relates two or three events from weekend activities • offers a few comments relevant to group conversation
5 *Broad understanding* of social situations, directions, and conversations. Easily understands and grasps what is being communicated.	• accurately summarizes a story that was just read • considers alternative responses to a complex question • follows a sequence of on-line directions to use software • takes notes of important information during lecture

Administration of Part II - *Designing an Intervention Plan*

Step 4: Identifying the Range of Interventions

What you will need:

Chart of Intervention Sets; Intervention Goals and Examples of Activities from this manual

What you will do:

Identify the range of intervention activities that is appropriate for your student, given the total score from Part I. Consider appropriate intervention goals and activities for your student.

How long it will take:

Approximately 5–10 minutes.

Step 5: Designing and Individualizing Intervention Goals and Activities

What you will need:

Intervention Goals and Examples of Activities from this manual.

What you will do:

Modify and develop intervention goals; design individualized activities.

How long it will take:

Approximately 30–40 minutes.

Step 4: Identifying the Range of Intervention Goals

In Step 4, you will use the total score (from the Score Sheet of the *Recording Booklet*) to identify the range of intervention goals that is appropriate for the individual who is being evaluated.

- Using the Chart of Intervention Sets below, identify the set (A,B,C,D, E) that corresponds to the individual's total score. The total score may fall within one or two sets.
- Each intervention set is associated with examples of communication goals and activities. The five sets can be found in the section of this manual titled *Intervention Goals and Examples of Activities* (page 31).

Review the intervention goals and examples of activities to consider whether or not they are generally appropriate for your student. If the score (e.g., 16) falls within two intervention sets (e.g., B and C), you will need to review the goals and activities associated with both sets.

Chart of Intervention Sets

A	B	C	D	E
6	**10**	**15**	**20**	**25**
7	**11**	**16**	**21**	**26**
8	12	17	22	27
9	13	18	23	28
10	14	19	24	29
11	**15**	**20**	**25**	30
	16	**21**	**26**	

Note: A number in **boldface** indicates that score falls within two intervention sets.

Step 5: Designing and Individualizing Intervention Goals and Activities

In Step 5, you will develop individualized communication intervention goals and activities. Within each intervention set, several goals and activities have been designed to serve as examples. Listed with each goal are the related dimensions. These goals may correspond to the observed communication behaviors of the individual you have evaluated. It is important to recognize that the intervention sets serve only as examples—they need to be individualized for each student. In addition to these examples, you will need to consider other goals that might be more important to your student. Because each person has unique skills and behaviors, as well as social environments, you will need to develop a unique intervention plan. Listed below are some guidelines:

- While reviewing the examples provided, write down any thoughts that may be triggered about related goals that are important for your student.
- Identify those goals that are currently of high priority. This may include only a subset of the examples provided or a limited number of goals. (Keep in mind that it might be possible to generate many goals, but your purpose is to identify the most important ones.) Consult with team members, including parents, to identify these critical goals.
- Be specific. A very important component of this step is to list examples of activities that will help the student achieve specific goals. Often, unless specific examples are provided, providers who work with the individual may not understand the particular need, the approaches, or the strategies required to promote the skill of interest.
- Modify intervention goals to meet individual needs. Think of the behaviors you want to observe in the individual that will indicate that he or she is making progress. (This will allow those who work with the student to monitor progress.)

Intervention Goals and Examples of Activities

- Set A = Scores between 6 and 11
- Set B = Scores between 10 and 16
- Set C = Scores between 15 and 21
- Set D = Scores between 20 and 26
- Set E = Scores between 25 and 30

Intervention Goals and Examples of Activities—Set A

Example 1. Help the individual orient to or respond more consistently to the interactions of others. [Social Action; Comprehension; Intent]

Comment: One of the first steps toward meaningful communication is the awareness of the presence of other people. For many individuals who have severe disabilities, social awareness may be sporadic. By promoting the consistency of the individual's ability to direct his or her behaviors (e.g., head turning, smiling, extending arms) toward others, social attention—as well as the concept and experience of interaction—is reinforced.

Context: Across learning and social activities, it will be important for those who interact with Mary to consistently give her an unambiguous signal to indicate their presence, as well as an opportunity for her to respond. Peers and adults should (a) try to approach her slowly from the front so that she can visually establish their presence, (b) call her name, and (c) give her a touch cue (e.g., gently touching her arm or taking her hand). Mary may require some time to respond, perhaps 5 to 10 seconds, as she may have a delayed reaction. Watch for Mary to smile, turn her head, vocalize, extend her arm, and/or move her body in excitement. When she does offer a response, reinforce her behavior by showing enthusiasm, giving her praise, or continuing the interaction or activity. Establishing social contact in such a way may need to be done several times within a short period of time to regain her social interest.

Example 2. Help the individual develop appropriate "anticipatory behaviors" in response to cues during social and functional activities. [Comprehension; Symbol Use]

Comment: An anticipatory behavior is an action which an individual takes to prepare for the next step of a routine or activity. Examples include spontaneously reaching for a cup after juice has been poured into it, standing up when the school bell rings, and raising one's hands when a classmate says "Catch!" Anticipatory behaviors represent important early communication skills. They imply that the individual can partly recognize or "understand" the meaning of a cue or signal or symbol, associate it to a very specific event, and produce a basic but appropriate response.

Context: In order to enhance Carl's ability to participate in daily routines he should be presented with a unique cue or signal to "communicate" that he is expected to respond in a particular way. The cue should be consistent so that Carl can eventually learn what action always follows it and what behavior is expected of him. During meals, for example, a spoon might be first placed in his palm to signify that he is to scoop food from a bowl (even if with hand-over-hand assistance). Similarly, whenever he is expected to go from one location to another (e.g., desk to music area), he should be given a signal (e.g., a touch on the shoulder paired

with verbalization) so that he can learn to associate the signal with the need to stand up.

Example 3. Be able to recognize and reinforce those behaviors that have communicative or potentially communicative value. [Intent; Symbol Use; Social Action]

Comment: Many individuals who have severe, multiple disabilities do not communicate intentionally, .e., with the purpose of gaining someone's attention. Frequently, however, behaviors that they do express can be regarded as having communicative value. For example, several times during the day, a student may vocalize, extend arms out, look around, or orient toward another person's voice. These behaviors, while not truly communicative, should be viewed as opportunities to respond, the goal being simply to help the student understand social "cause and effect" or the concept that one's behavior can lead to a social action. This concept forms a foundation for communicative intent and symbol use. It is important to identify and consistently respond to the range of general behaviors an individual might exhibit across learning and social contexts.

Context: It is important that Sari's peers and caretakers provide immediate feedback to her when she produces a potentially communicative behavior, such as crying or smiling. The most crucial component of one's response to Sari is that there is consistency in recognizing and treating her behaviors as if they were communicative. For example, when Sari cries in a particular way it might be interpreted to mean, "I need help." She should be approached by her communication partner and her behavior should be interpreted and clearly stated using sign and verbal language. The communication partner should then follow with some action to acknowledge Sari's cries (e.g., giving attention if she is bored, changing her position if she is uncomfortable). Similarly, when Sari smiles it could be interpreted to mean, "I like that," stated by her communication partner and followed with an appropriate response.

Example 4. Increase the ability of the individual to sustain attention to learning activities and social interactions. [Social Action]

Comment: When an individual's attention span is very short or variable, his or her involvement in learning and social activities may be quite limited. An important goal may be to help the individual direct and sustain interest in a meaningful activity. In general, one's level of interest is usually higher when engaged in activities that are motivating. In order to increase motivation during social and learning activities, several strategies might be considered, such as using preferred objects; alternating activities frequently so as to reduce "habituation," or the loss of interest after novelty wears off; involving the individual's friends in the activity; and encouraging at least partial participation in each routine.

Context: Dan's interest and attention span appear to be qualitatively better when he is involved in activities with objects that provide multisensory feedback (e.g., a switch-activated fan, vibrating toy, light box). If, for example, during an occupational therapy session Dan is working on activating a switch, a preferred object (e.g., a vibrating light switch) may be given to him for a few minutes and then replaced with another object that provides different stimulation (e.g., a cassette player with adaptive switch). After a few minutes, before he becomes bored with the second object, the original toy can be given back to him. He can use these two objects interchangeably for several minutes before introducing a third object.

Example 5. Help the individual develop an awareness of the presence of peers. [Social Action]

Comment: Social regard or awareness refers to the ability to acknowledge the presence or actions of another person. It is the most basic social skill and a prerequisite to interactions that are truly communicative, such as responding to a greeting or signaling someone for attention. One can help the individual build an increased awareness of the presence of peers. Examples include the following: consistently reinforcing any reaction (e.g., smile, head turning) of the individual to the social actions of others (e.g., greeting); increasing opportunities for the individual to participate in peer-group activities; assisting the individual to approach or acknowledge a peer; making sure that the individual is in close proximity to classmates during group tasks; and helping the individual learn the identities of peers.

Context: Even though John attends an educational program that provides some opportunity for interaction with typical peers, he does not appear to socially regard his peers during inclusive activities. As a result, John's typical peers do not attempt to interact with him. It would be helpful to identify naturally occurring social activities (such as recess on the playground or lunch in the cafeteria) and use these as opportunities to provide direct intervention between John and his peers. Teaching peers how to approach and initiate an interaction with John, and how to recognize and reinforce general reactions made by John, will help increase his social awareness. For example, a peer can lightly touch John on the arm and offer a preferred object. When John smiles, the peer can reinforce this behavior by rubbing John's arm and engaging him with the object.

Example 6. Teach the individual to use specific behaviors that relate directly to immediate wants or needs. [Symbol Use; Comprehension]

Comment: Some individuals use general behaviors (e.g., cry, vocalization, facial expression) to communicate their specific needs (e.g., attention, hunger, interest). It is often a challenge for many educators and care providers to figure out what these general behaviors might mean at the

moment. Although the individual may not be capable of using symbols (e.g., signs, single words), it may be feasible to teach him or her to use behaviors or "approximations" which more directly relate to a particular need. For example, the individual might be taught (through repetition and reinforcement) to extend his hand to indicate "more" during snack time. Initially, it may be helpful to teach the individual to use a few functional behaviors that are relevant to many contexts (e.g., "more," "no," "drink," "break") rather than a large "vocabulary" of behaviors unique to specific events or environments.

Context: To the extent possible, Amy's ability to communicate meaningfully using nonsymbolic behaviors should be enhanced. The natural behaviors that Amy uses, as they relate to her immediate needs, should be promptly interpreted and reinforced. For instance, when Amy extends her hand during snack, it can be interpreted to mean that she wants more juice, and she should be given her cup. At this time, she should also be given verbal and sign cues that would further introduce her to the association between reaching for something desirable and receiving it. Similarly, when Amy smiles and laughs while the radio is turned on, but then reaches toward the radio when it is turned off, it can be assumed that she enjoys the music and is attempting to communicate a desire for more. The radio should be turned on again (e.g., for 10 to 20 seconds) when she reaches toward it. Eventually, this nonsymbolic behavior (i.e., reaching or extending her hand) can be shaped so that Amy can begin to use some basic form of sign language (i.e., a gesture or approximation of the sign for "more").

Example 7. Promote the individual's understanding that the behaviors which he or she produces can lead to specific outcomes. [Intent; Social Action]

Comment: The aim of this goal is to promote the individual's understanding of social cause and effect. The individual may learn to understand that his or her action (cause) either results in some consequence or continues some action (effect, such as receiving attention from someone). Learning that there is a consistent association between one's behavior, such as loud vocalizing, and some consequence, such as getting someone's attention, is the basis for communicative intent, or the deliberate effort to convey a message to another person.

Context: Mike and his preschool aide engage in a "tickling" game that appears to be mutually enjoyable. This game could be used as an opportunity to build both an understanding of social cause and effect as well as to help develop Mike's understanding of control and consequences regarding his social environment. During appropriate times when Mike and his aide engage in their game, Mike's anticipatory reactions should first be observed to ensure that he is initiating or responding to the game (e.g., reaching toward the aide and laughing), and then his behavior

should be reinforced with the stimulation he enjoys (e.g., being gently tickled). When Mike stops producing the initiating behaviors, the game should end.

Example 8. Promote the differentiation of the individual's communication behaviors. [Symbol Use; Vocabulary]

Comment: Differentiation of behaviors (e.g., gestures, vocalizations, direct actions) is similar in concept to vocabulary development; having a larger repertory of such communication behaviors means that a person is better able to express specific needs or interests. For instance, rather than signifying "drink," one can more precisely indicate the desire for "coffee," "juice," or "water." Expansion of communication behaviors— symbolic or not— means that a person can represent and, presumably, express more concepts, actions, needs, and interests during social interactions.

Context: Kara does not appear to consistently use differentiated responses to indicate interest or disinterest in objects or activities. She often cries to express herself and can be comforted with a favorite toy (e.g., a light and sound toy). However, she may also use the same type of cry when she becomes bored with the object. To maximize Kara's ability to make a differentiated response, she may be physically prompted (with hand-over-hand assistance) to move her arm or hand toward the toy she desires. When she reaches toward the object, she should be rewarded with it. When Kara shows signs of boredom or frustration she may be prompted to push the toy away. The degree of physical prompts may be faded over time as Kara begins to perform these behaviors more independently.

Intervention Goals and Examples of Activities—Set B

Example 1. Increase the functionality of the individual's vocabulary (e.g., signs, spoken words, gestures, direct behaviors, picture symbols, etc.). [Vocabulary Use; Symbol Use; Consistency]

Comment: Development of communication skills is often viewed in terms of increases in one's vocabulary, such as the number of signs or single words an individual is able to use. However, it is equally important to help the individual use his or her existing vocabulary more effectively to indicate specific needs or interests; express choices and preferences; and appropriately label or identify objects, persons, events, and feelings. In other words, the main goal may be to help the individual develop mastery in the use of his or her communication behaviors rather than "build vocabulary" per se. Functionality of vocabulary use is reflected by the individual's consistency and precision in using the same words, symbols, or behaviors to refer to the same concept or need across situations.

Context: The primary emphasis of Christa's communication training should be to increase the functionality of her expressions, that is, the ability to apply signs when she needs to. Christa has learned a basic sign vocabulary (e.g., more, finished, eat, drink, work). It has been noted, however, that she rarely uses signs independently or in meaningful situations, even though people who know her well assert that she does know them. To promote both her acquisition and use of sign, Christa should be given repeated opportunities throughout the day to communicate in natural, meaningful contexts (e.g., during lunch or snack to request something to eat or drink; to indicate when she wants to take a break or continue working). When she is introduced to new signs, they should be concrete and simple. After producing a sign, Christa should be given immediate reinforcement. For example, after signing "break," she should get a short break from work right away.

Example 2. Promote the individual's ability to initiate interactions. [Social Action; Intent]

Comment: Some individuals are cue dependent in social interactions; that is, they may respond when others seek to engage them, but they may seldom initiate a greeting, request, or comment. The ability to initiate interaction without a cue or prompt is an important skill. It reflects the ability to reciprocate and show interest in others, actively rather than passively participate in social events, and show some degree of independence.

Context: To promote Raymond's active participation and his ability to signal another person during social interactions, he should be given numerous opportunities to communicate that he wants to begin or continue an interaction. During preferred activities or highly motivating social situations, Raymond might be encouraged to produce an expressive

behavior toward another person in order for an enjoyable activity to occur. For example, Raymond has been observed to delight in activities that involve music and dance. When the music or dance activity pauses for a brief period, one should wait for Raymond to initiate some behavior that may signify his interest to continue. For example, he may not spontaneously sign "more," but he might turn toward the person who is with him, vocalize, or exhibit another behavior that suggests an interest to continue (or understanding that the music/dance activity has stopped). These behaviors should be reinforced. The person with Raymond might say "More?" and then continue with the activity until the next pause. Such experiences will help Raymond eventually learn that by initiating a behavior, some outcome will result. The initiation of a request for some specific activity using "want" could be carried over into other situations as well (e.g., during mealtime; when working on the computer).

Example 3. Help the individual associate his or her direct behaviors with more conventional forms of communication. [Symbol Use; Comprehension]

Comment: In the development of communicative competence, one learns to express interests or needs through the use of symbols (such as words or signs) as opposed to gestures and direct behaviors (such as pointing or crying). This goal promotes the ability of the individual to learn associations between his or her direct behaviors and symbols. Over time, the individual may recognize the meaning of symbols (e.g., anticipating a break when given the sign for "break"), as well as replace behavioral forms of expression (e.g., leaving the table) with more conventional forms (e.g., requesting a break).

Context: Sonny currently communicates his needs through the use of actions or gestures, such as directly reaching or grabbing for desired objects. Although his needs do get met through the use of direct behaviors (e.g., he gets the object that he wants by grabbing for it), the behavior is often followed by negative reinforcement from his teacher or aide (e.g., telling him "No, don't grab"). At this time, it would be beneficial to introduce Sonny to the concept that object cues or photo cues can be used to express his needs and desires, resulting in more positive outcomes. Teaching Sonny to point to object cues or photo cues where possible (e.g., actual cassette player and photo of cassette player) will enhance his understanding of expression through the use of symbols and help to move him toward the use of more appropriate communicative behaviors.

Example 4. Help the individual gain experience in making simple choices by presenting consistent opportunities throughout the day for him or her to express a choice. [Intent; Comprehension]

Comment: Making a choice between two or more alternatives (e.g., choosing a book versus a game for free time) represents an opportunity for the individual to express an interest or preference, and to actively communicate it to another person. In a choice-making situation, the individual's behavior can be immediately reinforced for initiating a response (e.g., getting a cup of juice right after making the choice). It also involves the basic concept of cause and effect (e.g., selecting one alternative leads to a certain event), which promotes communicative intent.

Context: Making choices is a very important goal for Maria, and she should be given numerous opportunities during the day to make choices by indicating preferences for specific items. The training process should begin by providing Maria with basic, concrete, and consistent opportunities to indicate preferences during natural situations. This would involve allowing her to select from one highly motivating choice and one more neutral choice. For example, during a break from work, Maria could be given an item that she prefers (e.g., soda) and another that she neither likes nor dislikes (e.g., paper). She would then be asked which she wants. Once a choice is made, reinforcement should be immediate (e.g., if she chooses the soda, it should be given right away versus having her walk down the hall to the vending machine). Once consistency is established, then true choice (e.g., soda or tea) might be offered.

Example 5. Develop opportunities for the individual to engage in simple forms of turn taking. [Social Action]

Comment: The goal is to extend the individual's participation in the give-and-take process of social interaction beyond a simple acknowledgment (e.g., smiling when greeted) or response (answering "yes" or "no" when asked a question). Varying degrees of physical cues and verbal prompts may be required to help the individual continue an interaction or sustain attention to peers. Social turn taking, i.e., having a person communicate with peers by structuring their conversation or play, is one way to provide the individual with the experience of extended interactions.

Context: Attempts should be made to increase opportunities for direct interaction between Steven and his classmates during small-group activities, with an emphasis on increasing Steven's participation in social give-and-take interactions. By promoting Steven's awareness of others and his ability to reciprocate with a simple social response, he will learn basic forms of turn taking during a social interaction. One possibility is that, during circle time routine, a peer can give Steven his name tag and help

him hang it on the board. The peer can then help Steven select and pass a name tag to the next student, and finally, help him return to his seat.

Example 6. Help the individual to express likes and dislikes by indicating "yes" or "no" in the context of natural situations. [Symbol Use; Intent; Vocabulary Use]

Comment: One of the most important communication skills is the ability to respond "yes" or "no" to indicate interests, choices, and desires. In its early form, the skill may consist of direct behaviors, such as turning one's head, reaching, smiling, pushing someone's hand away, or sweeping an object off the table. When an individual's communication skills consist primarily of such nonsymbolic behaviors, more conventional forms should be promoted by pairing the symbol with the behavior across situations (e.g., "Oh, you're telling me, 'No.'").

Context: Teaching Joan to develop a consistent yes/no response is an important focus of her communication training and will help increase her ability to indicate basic needs. For example, Joan's direct behaviors (e.g., pushing away an unwanted item or pushing away the teacher's hand) can be shaped with verbal prompt and sign cues to reinforce the concept of "no." It may be necessary to begin training by providing hand-over-hand assistance to form the sign for "no" during these situations. Likewise, when she reaches for a desired object, she should be given a verbal prompt (e.g., "Do you want this?") and assistance to form the sign "yes." She should then be given the object.

Example 7. Promote the individual's ability to attend to and participate in group activities. [Social Action; Comprehension]

Comment: An important overall objective may be to promote the quality of the individual's social attention, interest, and participation during formal and informal peer activities (e.g., small-group tasks, free play). It may be necessary to redirect the individual's attention to the activity by calling his or her name or through the use of varied materials. This will help the individual learn to be redirected to a structured task. Expressive communication on the part of the teacher or person providing intervention in this manner should be frequent, simple, and consistent (use of same names of objects, use of simple commands, saying the student's name before each command). It is more important that the individual understand he or she is expected to partially participate in an activity (even for a few minutes) than to actually complete an entire task.

Context: Efforts to increase Bobby's attention during group activities should focus on increasing his participation, regardless of whether he can actually complete the entire task. Bobby's role as an active participant and the meaningfulness of the social experience can be emphasized even when Bobby only partially participates in a group activity. Since Bobby becomes fatigued and frustrated easily, the most appropriate time to encourage his

participation is at the beginning of a group activity (e.g., during the first 5 to 10 minutes). After that time, or when he begins to show signs that he is uninterested, Bobby's activity may need to be changed. It is important to keep Bobby occupied with related activities while he remains a part of the group. For example, Bobby can be actively engaged by his teacher aide using motivating and manipulative objects (e.g., brightly colored counting rods) that relate to the overall activity (e.g., a math lesson).

Example 8. Promote the individual's ability to respond consistently and appropriately to simple commands, requests, or comments. [Comprehension]

Comment: This competency can be especially important to help the individual exhibit anticipatory responses during routines (e.g., attempting to stand up during a transition from one activity to the next) and to increase his or her ability to partially participate in activities. Over time, it would be ideal to extend the types of simple requests the individual can recognize and associate with an action.

Context: Commands and requests should be made to Carl using clear, simple, and consistent cues. It would be especially important to pair verbal commands with sign cues. It has been noted that Carl has a delay in processing information; therefore, his teacher or aide should wait at least 15 to 20 seconds for Carl to respond to a command (e.g., "Stand up") before it is repeated. If he does not respond, the same verbal and sign cues should be given again. One should not change the language of the command when it is repeated (e.g., from "Stand up" to "Can you get up") as this will require him to process a different command and may cause a further delay. Physical prompts and assistance (e.g., a tap on the elbow) may initially be needed to help Carl develop anticipatory responses, but these should be faded over time.

Intervention Goals and Examples of Activities—Set C

Example 1. Help the individual direct social behaviors toward peers with greater consistency and more conventional forms of communication. [Social Action; Intent; Vocabulary Use]

Comment: There are several skills involved in communication, the most important of which involve social interaction processes. Beyond being aware of the presence of others or simply responding to another person's greeting, communicative competence involves skills such as signaling the interest to communicate, engaging others in appropriate ways, knowing how to continue an interaction, and communicating in ways that others can understand. Examples of very specific skills include the individual's use of proper names when approaching others or responding to others when being addressed or approached.

Context: Several concerns exist regarding Joe's peer social interactions. At times, he has been observed to participate in brief interactions with peers, but he does not do so consistently. It has also been noted that interactions do not extend beyond a basic initiation-response sequence. It may be beneficial to prompt Joe during appropriate situations not only to approach a peer, but also to sustain an interaction. For example, when Joe meets peers at school (e.g., visitors, students from other classrooms), he could initiate a routine that consists of saying "Hello," shaking hands, asking a question (e.g., "How are you?"), and waiting for a response. Joe may need prompts to respond to questions asked by others during these social exchanges. Prompts can serve to help Joe learn to extend and maintain a social interaction, but caution must be exercised so that he does not become too dependent on prompts.

Example 2. Promote or reinforce the individual's use of simple word combinations. [Complexity; Vocabulary Use]

Comment: Combining words or other symbols is an important skill that reflects the ability of the individual to convey more specific or complex thoughts. The objective is to promote the individual's ability to associate subjects and objects (e.g., bus) with action words (e.g., go) or other descriptors (e.g., big, yellow). The goal is to help the individual acquire the skills and vocabulary to use more elaborate and complex forms of expressive communication.

Context: Tasha has the ability to expressively communicate using simple combinations independently, but she typically points to one picture on her communication board to express her wants or needs. It would be helpful if Tasha's communication board were set up in such a way as to promote her ability to use existing vocabulary to produce more elaborate and complex messages. For example, rather than having her communication board consist of mostly objects, columns could be set in a left to right sequence which would include subjects (e.g., me, you, she,

he) as well as objects (e.g., home, school, ball, book, computer). When Tasha makes simple two-word combinations spontaneously and consistently, a third column could be added to enable her to begin to make more complex sentences involving three-word combinations (e.g., me play outside).

Example 3. Increase the individual's functional vocabulary by labeling actions, events, or objects during natural activities. [Vocabulary Use; Symbol Use; Comprehension]

Comment: By developing a communication- and language-rich environment, the individual will be exposed to a variety of vocabulary words throughout the day. Creating a communication environment may involve labeling, using words and picture symbols, typical items found in the classroom (e.g., desk, chair, door, light switch, bookshelf, sink). It would then involve referring to these labels during the course of everyday activities and situations.

Context: Evan uses single concrete signs to identify specific people, objects, and activities by name (e.g., cookie, chair, ball, bus, Mom, Dad, Evan, eat, drink, toilet). At this time, Evan's functional vocabulary could be expanded beyond simple object names. This can be achieved by teaching Evan other labels that can be associated with specific objects or activities (e.g., run). Abstract signs (e.g., fast, slow) will also be important for Evan to learn, and should be presented in natural contexts. Evan's ability to acquire and use new vocabulary will be enhanced by selecting familiar actions, objects, or events that occur frequently and during routines.

Example 4. Promote the individual's ability to comprehend and follow directions that go beyond familiar one-step commands. [Comprehension]

Comment: An individual's ability to comply with multistep commands indicates that he or she not only comprehends two or more specific ideas, but also can integrate and sequence them. Two-step commands, for example (e.g., "Put the book on the shelf and bring me the tape") require that the individual store two requests in memory, perform the first task, and initiate the second task. Most daily routines involve more than a single step, and it is important that students have natural opportunities to carry out complete routines, as well as understand the verbal directives that correspond to them.

Context: Linda often needs to have simple one-step commands repeated to her before she attempts a task. Several steps may be taken to increase her ability to respond appropriately to commands. A physical prompt such as a light tap on the shoulder can be used to cue her that a command is about to be given. Once it is certain that she is paying attention, then the command can be issued. Verbal commands may be paired with sign

cues to provide an added stimulus. It would also be helpful to increase the number of opportunities throughout the day for her to complete simple commands. Identifying natural situations during the day (e.g., lining up at the classroom door, passing out papers to classmates, giving a pen to a classmate) would provide her with greater experience and practice, and should serve to increase her ability to follow directions.

Example 5. Reinforce the student's ability to engage in simple conversation pertaining to everyday activities. [Symbol Use; Vocabulary Use; Social Action]

Comment: Opportunities for social conversation are often taken for granted. However, for many persons with very basic communication skills, it is essential to build in structured, yet natural, conversations to increase social contact, provide frequent opportunities to relate needs and experiences, and develop social relationships. Question-answer formats (e.g., "What have you got there?"), choice situations (e.g., "Do you want to hear hip-hop or rock?"), or more open ended comments (e.g., "That's a beautiful drawing!") are examples of basic formats for conversation.

Context: Darnell has been observed to initiate interactions and participate in brief turn-taking exchanges with others. However, the topics of his communicative exchanges are generally concrete and relate to immediate events (e.g., sharing a book that he is looking at). It may help increase his ability to engage in short conversation by asking him relevant questions pertaining to daily activities. For example, when preparing to go to the grocery store as part of a community-based activity, Darnell can be asked several questions pertaining to what he is going to buy and why.

Example 6. Promote the individual's direct participation in turn-taking activities. [Social Action; Intent]

Comment: Turn-taking activities, such as playing board games or directly contributing to a group project, help the individual establish several important social concepts, such as reciprocity (responding to others and initiating interaction) and cooperation. Turn taking implies that one attends to what others are doing or saying, anticipates and prepares to produce one's own response, and recognizes that one's response, in turn, affects the next step in the social sequence.

Context: Anticipating when it is her turn and expecting someone else to respond in a given situation represent important social-communication skills that should be addressed with Aida. Peers and adults who spend time with Aida in various social and learning situations should involve her as much as possible in reciprocal interactions. For example, a simple card game with a peer can be an opportunity to emphasize the concept of social sequencing (e.g., my turn, your turn). This concept could also be addressed during a computer activity in which a classmate would prompt

Aida when it is her turn to press a switch which activates the program. Aida may also be prompted to signal to her partner to use the switch.

Example 7. Promote the individual's understanding of basic concepts (e.g., opposites, similarities, properties, functions, categories) in the context of natural activities. [Comprehension; Vocabulary Use]

Comment: For many individuals with basic communication skills, understanding of basic concepts about object properties (e.g., hard-soft), relationships (e.g., bigger-smaller), functions (e.g., eat, wear), is an abstract process. However, there are many opportunities throughout the day when the learning of these concepts can be built into natural routines and activities. It is essential to utilize these opportunities (e.g., placing objects on one's left vs. right, selecting the larger vs. smaller cup, using the dry vs. wet washcloth). The goal is to increase the individual's language development through use of natural vocabulary-building exercises.

Context: In order to promote Ruthie's vocabulary and language comprehension, it would be appropriate at this time to introduce concepts such as similarities (e.g., same and different) as well as to teach opposites (e.g., many/few, tall/short, big/little). A "concentration game" involving Ruthie and two classmates can be a natural situation in which the concept of matching pictures that are the same can be targeted. Other age-appropriate activities can be used to teach basic concepts, such as a computer program that focuses on identifying different pictures or categorizing items by various attributes.

Example 8. Promote the individual's ability to express feelings, states, or needs through conventional symbols instead of through direct behaviors, such as crying or hitting. [Symbol Use; Intent]

Comment: Many individuals whose communication skills are limited express their feelings and emotional reactions only with direct behaviors, such as hitting, shouting, and throwing things. These behaviors may be quite functional, but the forms of expression may place the individuals or others at risk. A functional communication training approach may be important to consider. One does not wish to eliminate the direct behaviors, but to help individuals learn to acknowledge and communicate their feelings using more conventional symbols so that more appropriate responses (e.g., comforting, break from work) can result.

Context: It is important that Doug learn to communicate his feelings through conventional symbols instead of relying on physical behaviors or actions. This includes expressing a need for help, hunger, or pain, among others. For example, if Doug cries when his mother leaves the preschool classroom, it would be an appropriate time to teach him the sign for "sad" by pairing the sign with a picture symbol. During those times when he gets fatigued and puts his head on the table, the teacher could show him a

picture symbol and make the sign for "tired." This could be an opportunity for the whole class to review several different feelings and states (e.g., happy, sad, bored, hungry). In the context of this activity, the teacher could ask each of the students to point to a picture cue or make the appropriate sign for how they are feeling, and could help Doug make the sign for "tired."

Example 9. Promote the individual's ability to make a true choice during natural opportunities throughout the day. [Intent; Comprehension]

Comment: A basic choice-making opportunity occurs when an individual is presented two options (e.g., one or another activity), regards each one, and indicates preference for one over the other. An extension of this skill is the ability to understand when a choice-making situation is appropriate (e.g., "Can I choose the next book?"), considering acceptable alternatives that are not predetermined by someone else, and expressing one's preference. Activities under this objective would seek to extend the basic choice-making behaviors described in the previous set of interventions (Set B).

Context: Beth needs to learn to recognize true choices and to appreciate the outcome of making a choice. She might be given an opportunity to select a snack by presenting her with two items that she likes (e.g., coffee cake or chips), or to indicate a preference for which classroom job she wants do (e.g., watering plants in the classroom or collecting papers). Eventually, rather than being given predetermined items or activities from which to choose, Beth could be given an opportunity to express a choice in response to an open-ended question. For instance, during snack Beth could be asked "What do you want to eat?" If a choice is not made, it may be necessary to review the different possibilities (e.g., apple, raisins, pretzels, crackers, nuts, cake, chips) and then ask the question a second time.

Intervention Goals and Examples of Activities—Set D

Example 1. Promote the individual's ability to express feelings and to recognize the feelings of others during social interactions. [Social Action; Symbol Use]

Comment: Training of social communication skills often focuses on teaching fundamental strategies such as initiation or response to a social cue. For an individual whose competencies go beyond these basic elements of social communication, it is important to consider ways to extend and refine skills. This may include increasing the individual's ability for self-sxpression using apopropriate social skills and enabling the individual to talk about emoti ons in social contexts.

Context: Manny often expresses his feelings of agitation by throwing objects, hitting himself, or hitting others. He often needs to be reminded to express his feelings with words rather than behaviors. Several strategies can be used to help Manny talk about emotions and reduce his tendency to react physically when he gets upset. Role-playing activities with peers in which different emotions are acted out and discussed might help Manny acquire and use more appropriate means of expressing himself. A peer "Concentration" or "Go Fish" type of game, which involves identifying and labeling emotions, can provide increased opportunities to talk about different feelings. Manny's success in identifying and discussing his feelings in an appropriate manner can be observed by a decrease in behaviors such as throwing, yelling, or hitting.

Example 2. Promote the individual's acquisition and use of symbols representing abstract concepts. [Symbol Use; Vocabulary Use]

Comment: Functional vocabulary includes words that relate to one's basic needs, the here-and-now, familiar persons, and common objects. As the individual gains proficiency with these skills, efforts should be made to enhance the individual's level of symbolic understanding and thus augment language development, expressive vocabulary, and communicative competencies.

Context: In order to expand Carmine's expressive language and communication proficiency, it might be helpful at this time to focus on activities involving symbol matching or sorting by taxonomy, function, and multiple dimensions. Computer programs that provide word-to-picture matching activities can be used to help increase Carmine's understanding of abstract symbols. Matching activities should be made increasingly more abstract (e.g., word-to-word), and the level of difficulty should advance as Carmine recognizes more and more abstract symbols. Similar types of computer programs might be used to reinforce concepts involving attributes of objects and other schemes for sorting and classifying.

Example 3. Increase the individual's ability to extend conversation by providing *more elaborate or* detailed comments. [Complexity; Vocabulary Use; Comprehension]

Comment: Responding to questions in complete sentences, providing detailed responses, and participating in extended conversations are components of language and communication that can be fostered via intervention. The use of prompts or leading questions in the context of particular situations may help provide opportunities for and reinforce extended responses on the part of the individual.

Context: Erica has been observed to provide clear and concise messages, but seems to have difficulty relating events, characteristics, and details to a main idea. It might be helpful in the context of a given situation to ask Erica specific questions that would serve to extend the topic or idea she is discussing. For example, one could help Erica sequence specific parts of an event that took place earlier in the day by asking questions pertaining to the event (e.g., "What happened next?" "Then, what did you do?"). Setting up an interview between Erica and a classmate for a weekly class newspaper could provide another opportunity to help Erica learn to elaborate on ideas. Erica and her partner could take turns asking and answering questions of each other. If Erica's responses are not comprehensive enough, Erica's partner could ask her probing questions.

Example 4. Promote the individual's ability to sustain interactions with peers beyond simple give-and-take social interactions. [Social Action; Intent]

Comment: As social and communication capabilities increase, social interaction skills take on more obvious and important characteristics of overall communication proficiency. Social communication involves the ability to engage others in a meaningful conversation. The specific goal of this type of intervention is to enable the individual to experience longer periods of interaction with peers.

Context: Opportunities to promote richer and more meaningful peer interactions need to be identified and/or created. While Richard does have some opportunities to interact with his classmates, these interactions are often fleeting. It has also been noted that Richard spends the majority of his day in close physical proximity to his one-to-one assistant. Strategies to increase the quality and duration of peer interactions might include decreasing the amount of adult intervention provided and identifying a peer who can offer support during certain activities. Increasing circumstances that promote spontaneous interaction with a peer group should provide Richard with more opportunities to ask and respond to questions and to participate in lengthier conversations.

Example 5. Promote the individual's ability to comprehend multiple-step directions, extended conversation, or longer stories. [Comprehension]

Comment: One method of determining whether or not an individual has understood complex commands or stories is by the responses to questions or requests. Helping an individual learn strategies to process several different steps, such as those involved in complex requests, may initially require helping the individual focus, link one step to the next, or review portions of the information given. The ultimate goal of this intervention is to increase the individual's language comprehension skills.

Context: It is important that adults working with Martha use a variety of strategies keep her focused and engaged in a particular activity or task. It might be helpful to work with Martha on linking the first step in a set of directions to the second, or asking her to repeat all directions before beginning a task. Reviewing an entire set of directions or pieces of information in a story or conversation should also serve to guide Martha in processing complex requests, stories, or discussions. Finally, it might prove useful to demonstrate or model to Martha a specific sequence of steps involved in completing a task before asking her to do it herself.

Example 6. Help the individual participate independently in turn-taking activities with peers. [Intent; Social Action]

Comment: Turn taking is a key component of social interaction and conversation. Specific strategies to promote these skills in social situations may involve structuring circumstances or environments in which the individual and a peer are required to share materials, ask questions of each other, and provide feedback to each other. Over time, adult intervention should be faded during these activities and the individual encouraged to sustain an interaction with greater independence.

Context: Keith seems to be generally fond of his classmates and has been known to enjoy peer interactions. He has been observed offering one or two questions or comments relevant to an ongoing small group conversation. However interested he is in his classmates, he has also been observed having a difficult time sharing materials and taking turns in social and learning situations. One possible strategy to increase his independence and participation in turn-taking activities might be to structure cooperative games and activities that require Keith to take turns with his partners. These activities can take place during math class, small group reading period, science class, or during "free time" in the classroom. It is important to make sure that Keith is paired with two or three other students who will encourage his participation, take turns, and include him in conversation.

Example 7. Reinforce the individual's ability to sequence the events of stories or activities. [Symbol Use; Vocabulary Use; Comprehension]

Comment: The skill of connecting ideas in an organized fashion, without fragmentation, becomes more apparent as an individual's language proficiency increases. Helping the individual make these connections can be accomplished through several strategies. For example, sequences can be elicited by demonstrating or expressing what the next step would be in a sequence of steps, or by helping the individual relate steps of the story or activity to another person.

Context: Teaching Maggie strategies to organize her thoughts and to present coherent and cohesive summaries of events will help increase her ability to relate stories and events. One strategy is to help Maggie learn to develop an outline for a sequence of events that took place. For example, upon return to school from a field trip to the zoo, discuss with Maggie what happened during the day. Detail the sequence of events and help her actually write an outline describing the order of things as they occurred (e.g., beginning with the bus ride to the zoo, naming animals they saw, having picnic lunch and identifying what they ate, bus ride back to school). Maggie could then take home this outline and refer to it as she relates the events of the day to her family.

Intervention Goals and Examples of Activities—Set E

Example 1. Promote fluency in American Sign Language and social language skills by creating additional opportunities for the individual to engage in conversations with peers. [Social Action; Vocabulary Use]

Comment: As the individual acquires and uses more sophisticated forms of social communication it becomes important to consider ways to refine these skills and promote opportunities for use in everyday activities. This can be accomplished by helping the individual increase his or her knowledge and vocabulary about age-appropriate and socially relevant topics, and by structuring peer group situations.

Context: Randy's communication and social interaction is qualitatively different when she is in the company of adults versus classmates (e.g., she tends to be more involved in conversation when with adults). Even though her sign language skills are on par with those of her classmates, she does not participate to the same degree in conversations and social activities. One strategy that might serve to increase her proficiency in peer social interactions and group conversations would be to have Randy participate in a "focus group" activity in class. This would provide a structured opportunity for her to engage in socially relevant discussions with a peer group and to learn new vocabulary and topics of conversation appropriate to teens her age. Additional opportunities for peer conversations could be created by having the group discussion carry over into other activities (e.g., during lunch).

Example 2. Promote the individual's ability to formulate and abstract main themes of brailled text in academic content areas (e.g., language arts, science, history). [Comprehension]

Comment: The abilities to summarize a story, follow a sequence of directions, or participate in complex conversations are indicators of an individual's ability to comprehend language and communication at a complex level. Specific interventions, such as teaching him or her how to identify key points of information in a discussion, story or lecture, may be used to further promote the individual's comprehension skills.

Context: While Bill is able to verbally summarize the major themes of class readings, he often has difficulty describing specific details of readings as well as following more complex or convoluted group discussions. It might be helpful to require Bill to describe both verbally and in a written summary the sequences of events from a class reading assignment or group discussion. In an effort to increase his level of comprehension and understanding, it may also be useful to teach him to take notes using his brailler (e.g., by identifying the key points and important information presented during a lecture).

Example 3. Promote the individual's ability to prepare and organize his or her thoughts when talking to a group of peers. [Social Action; Vocabulary Use; Comprehension]

Comment: Skillful communication includes the ability to effectively plan, sequence, and convey ideas. Efforts to increase speaking skills and confidence when talking to others can be promoted by focusing on these elements of communication.

Context: It has been observed that Victor tends to socially withdraw when he is in a group of three or more peers. He often mumbles and seems to forget his train of thought when speaking. It might help Victor's social interaction and organizational skills if he is given opportunities to practice speaking clearly and loudly enough for others to hear and understand him. Victor may need to be reminded to express himself in a voice and tone which others can hear clearly and understand. It might also be helpful to create structured opportunities for Victor to talk to a large group of peers (e.g., giving an oral book report; asking or providing elaborate answers to questions during class discussion).

Example 4. Promote the individual's ability to express opinions and to acknowledge those of others expressed during small-group discussions. [Social Action]

Comment: An individual's effectiveness in communicating with others combines skills of language with skills of social interaction. The ability to engage others in lengthy conversation, to hold a discussion, or to proficiently communicate ideas requires one to effectively offer an opinion and to listen and respond to others. The goal of this type of intervention is to master these aspects of social communication.

Context: Minerva rarely expresses her thoughts or feelings when involved in inclusive activities with typical peers. It may prove beneficial to increase opportunities for Minerva to participate in loosely structured socially oriented activities with a specific group of classmates. For example, role-playing activities in which Minerva can assume the role of someone who is more outgoing may enable her to express opinions during a nonthreatening activity. Minerva may also be encouraged to participate in class discussions which allow students to express their opinions regarding specific topics.

Example 5. Promote the individual's ability to gain more advanced inquiry skills. [Intent; Social Action]

Comment: In order to communicate effectively and independently with others, an individual should be able to seek information or clarify misunderstandings. This goal aims to encourage more independent study and problem-solving skills and to reduce the need for adult intervention or assistance as a result.

Context: It is important that Charles learn appropriate and more independent methods and skills for seeking information when he requires clarification or has a particular question. Charles currently tends to rely on teacher support to complete his work. This impulse should decrease if opportunities are created that foster greater independence or peer assistance. Charles could, for example, be cued to attempt a task independently before asking for assistance. When necessary, a classmate could serve as a peer assistant or peer tutor to help him solve problems regarding class assignments (e.g., to search the internet; to clarify directions for a project).

Example 6. Increase the individual's creative expression through activities that emphasize imagination, story lines, narrative, and continuity of thought. [Comprehension; Complexity; Vocabulary Use; Symbol Use]

Comment: Creative activities, such as writing poems, singing songs or acting out stories, present important opportunities for individuals to express their thoughts and feelings using language. The goal of this intervention is to promote the individual's use of language in a variety of activities that foster creativity and imagination.

Context: In an effort to increase Michelle's understanding of and participation in complex conversations and communicative interactions, it might be useful to develop various opportunities throughout the day that would encourage her to use language creatively. For example, after reading a play or story during Language Arts class, Michelle and her classmates could "act out" the different roles, create additional dialogue, or write new endings to the stories.

Example 7. Increase opportunities for the individual to use his or her augmentative communication device during group conversation and in classroom settings. [Complexity; Vocabulary Use]

Comment: An augmentative communication device must be programmed to meet the individual's specific communication needs and interests, so that he or she is able to relate ideas effectively. The language and topics of conversation should be meaningful and appropriate for the age of the user.

Context: Lou has been observed to independently and successfully use his augmentative communication device in one-on-one situations with his speech-language therapist, parent, and aide. To increase his ability to communicate expressively using his augmentative device, it is necessary that the device be available at all times (i,e., physically accessible to Lou, the battery charged, etc.). For instance, the Cannon Communicator should be attached to Lou's wheelchair tray whenever he is seated in his wheelchair. During those times when Lou is using other types of equipment (e.g., prone stander; adapted desk), the strap for the

communication device should be used to secure it around his neck or arm, depending upon his preference. His teacher and classmates must recognize that Lou is capable of expressing himself independently using this device, and they need to respect the time it may require for him to spell a message (e.g., he should not be interrupted or distracted while he is typing a message).

Case Illustration

Marie is a 9-year-old girl who attends an inclusive education program in her local public school and lives at home with her parents, older brother, and younger sister. Marie has been diagnosed as having congenital rubella syndrome (CRS), resulting in deaf-blindness. She has bilateral cataracts but is able to distinguish specific objects and can play with items such as a tennis ball that she is able to find. Marie also has a severe bilateral sensori-neural hearing loss. For many individuals who are deaf-blind as a result of CRS, communication is a major educational challenge. Effective interventions might promote the use of American Sign Language, tactual signs, gestures, object symbol systems, assistive devices, or direct behaviors. CRS is often associated with multiple disabilities, as is the case with Marie.

Specific educational issues and objectives were identified for this evaluation. These include evaluating her functional receptive and expressive communication abilities and reviewing problem behaviors that interfere with learning and meaningful social activities.

Case Illustration

Dimensions of Communication

Recording Booklet

Harvey H. Mar, Ph.D
Nancy Sall, Ed.D

General Information

Name: Marie Date of Birth: _____

Age: 9-04 Sex: F Date of Evaluation: _____

School: Village Elementary Grade/Class: 3rd

Evaluator :
Carol

Background Information

Medical Condition or Diagnosis: Congenital Rubella Syndrome

Other Disabilities: bilateral cataracts; severe bilateral sensori-neural hearing loss; moderate growth retardation

Degree of Mental Retardation: severe

Cognitive Skills (form of assessment; dates): informal evaluations & observations; Educational Assessment Report focusing on matching objects, identifying colors, 1:1 correlation, concept of "one," and cause - effect

Primary Mode of Expressive Communication: single signs

Augmentation (yes/no, if yes, describe): N/A

Educational Setting: Public school inclusive education program; 1:1 assistant throughout day

Therapy (, PT, Speech/Language sessions per week): Orientation & Mobility instruction (1 hr./wk.); vision instruction (1 hr./wk.); hearing consultation (1.5 hrs./wk.); occupational therapy (1 hr./wk); augmentative communication consultation

Additional Information (e.g., educational goals; behavior concerns): Educational concerns include functional receptive and expressive communication; problem behaviors (e.g., rocking, hitting self) that interfere with learning & social activities, and general education setting

Observation Form

Setting: Classroom Date: _____

Peers Present (how many): 29 Start Time: 11:00 am

Others Present (e.g., 1:1 assistant): Yes End Time: 11:30am

Activity/Stimulus	Behavior/Response
(Free-period/snack time)	
1) M. Sitting at desk with snack of cookie and juice	1) Hits self repetitively on side of head with heel of hand and giggles.
2) A. Holds down her hand & signs "stop hitting."	2) Moves hand away from A. & Continues to hit head
3) A. Signs "eat."	3) Gazes at lights, then takes bite of cookie
4) A. Asks "want drink?"	4) Signs "more drink" independently in response to question
5) A. Pours juice in her cup & signs "drink"	5) takes cup and drinks juice
6) —	6) signs "more" spontaneously when cup is empty
7) A. Pours more juice in her cup	7) Takes cup and drinks, then puts cup on table and looks up at ceiling lights and waves fingers in front of eyes
8) A .tells her to bring juice to the refrigerator and then hands the container to M.	8) Grasps container, stands up & walks to refrigerator in back of room - opens door of refrigerator but drops container on floor. Without prompt or cue, bends down & picks up container - then puts container in refrigerator & closes door. Walks back to desk

Key: M = Marie; A = Assistant Teacher

Observation Form

Setting: *lunch room & playground* Date: _____

Peers Present (how many): *10 (at her table)* Start Time: *12:45 pm*

Others Present (e.g., 1:1 assistant): *Yes* End Time: *1:30 pm*

Activity/Stimulus	Behavior/Response
(Lunchroom)	
1) Seated at table between C. & A. A. hands her pizza	*1) Takes bite of pizza, then looks at ceiling lights and waves fingers.*
2) C. signs to M. "stop waving"	*2) Continues to wave fingers in front of eyes - ignores C.*
3) A. gives her pizza & signs "eat." A. holds down the hand M. is waving.	*3) Pushes away pizza with free hand & pulls other hand away from A. then begins to jump up & down in seat.*
4) A. asks "finished?"	*4) Signs "finished" and pushes away tray*
5) A. tells her to put away the tray	*5) Stands up, takes tray, & walks to other side of cafeteria. Puts tray on counter & walks back to table.*
6) C. asks if she wants to go outside & takes her hand	*6) Stands up and holds C's hand. Walks to door and goes outside with C.*
(Playground)	
7) C. asks if she wants to play ball or jump on trampoline	*7) signs "jump" and smiles*

Continued ⟶

Key: C = Chris (classmate); A = Assistant Teacher; M = Marie

Observation Form

Setting: *lunch room & playground (continued)* Date: _____

Peers Present (how many): _____ Start Time: _____

Others Present (e.g., 1:1 assistant): _____ End Time: _____

Activity/Stimulus	Behavior/Response
8) C. walks w/ M. to trampoline. There are 2 other students in line ahead of them.	8) Begins jumping in place while waiting on line. Signs "jump," but not directed to C. or any other peer.
9) Another peer approaches and takes M's other hand. Holds her left hand while C. continues to hold her right hand.	9) Willingly takes peers hand - no apparent differentiation from one person to next. Stops jumping. Takes her hand away from C's hand & puts it around C's neck, then waves fingers in front of her eyes.
10) C. tells her it is her turn & guides her over to trampoline.	10) Jumps up & down on trampoline, giggles & smiles - continues for @ 5 minutes.
11) A. approaches & taps her arm - tells her "finished, go inside."	11) Turns away from A. & continues jumping.
12) A. tells her again "jumping finished, need go inside." & takes her hand.	12) Stops jumping, steps off trampoline - then starts jumping on ground & giggles.
13) A. guides her into building.	13) Walks with A. - once inside, walks independently (avoids obstacles). Stops 2x to wave fingers in front of eyes.

Interview Form

Person Interviewed: Ms. Smith Date: _____

Relationship to Individual: Classroom teacher

Start Time: 9:00 am End Time: 9:30 am

1. How does the individual spontaneously communicate needs and interests (i.e., forms of communication)? How does s/he ask for something specific (e.g., drink, toy, book)?

Occasionally initiates on own - for example, initiates when help I needed by signing "help." Will use single signs to indicate desire for food or drink. Makes vocalizations ("mmm") but these don't seem to reflect specific wants or needs..

2. What are the individual's most typical comments or requests? Give examples of exactly what the individual says or does.

Mostly comments about immediate wants or needs. Uses signs to communicate, including "more," "drink," "eat," "finished," "help," and "cookie."

3. How does one best communicate with the individual? (e.g., Speech? Sign Language? Gestures? Combinations of forms?)

Use single signs and hand-over-hand signs but do not pair with verbal language. Some Mayer-Johnson picture symbols ("bathroom") and use of some object cues for a calendar box (mini violin = music; ball = gym)

4. Most of the time, will the individual use single words, two-word sentences, or lengthier sentences?

Spontaneously will use single signs. Has made some progress in use of 2 & 3 word combinations. Occasionally uses 2-sign combinations spontaneously ("more cookie," "more drink"). Requires prompt for 3-word combinations ("more cookie please").

5. Describe how the individual interacts with others.

Peers still initiate interaction with her. On occasion, Marie will respond, but does not initiate social interaction independently. When with peers, she mostly engages in physical behaviors (e.g., waves fingers; jumps; light gazes; flaps hands,). Will participate with peers if she enjoys the activity (e.g., jumping on trampoline).

6. Describe how well developed or extensive the individual's vocabulary is.

Common vocabulary words include "cookie," " drink," "help," and "more." Can sign categories of items in response to a question, including different food items ("cereal," "cookies"), drink items ("juice," "milk," "soda") and preferred activities

7. Can the individual correctly respond to commands? Provide specific examples of typical commands.

Follows 1-step directions: "sit," "stand," "bathroom-go," "stop' (give in sign).

8. *How does Marie indicate that she does not like or want to do something?*

She tends to turn away or push away something that she clearly doesn't want. Sometimes she rejects activity she doesn't like by placing object cue (from calendar box) in the "finished" box and then continues to search through the box until she finds an activity she likes.

9.

Structured Interaction Form

Setting: *Classroom* Date: _____

Start Time: *11:45 am* End Time: *12:15 pm*

Others Present (e.g., interpreter, aide, parent): *Yes*

Evaluator's Comments, Activities, or Setting Events	Individual's Specific Behaviors, Responses, or Comments
(Peers leave for gym; A. stays to interpret)	
1) I approach & tell her "hello" & that we are going to work together	*1) Looks up at ceiling lights - no response to me or to A.*
2) I take her hand & walk to table in back of room.	*2) Accepts my hand & walks with me - sits in chair that I point to, on request.*
3) Matching Objects with Signs - Presented with: milk, juice box, soda can, flashlight, ball, hairbrush, pen, cup.	*3) signs words for each of the objects in response to question "what's that?" Knows signs for all objects except pen & hairbrush (doesn't answer anything for those two).*
4) 1-step directions: "wipe table," "give me," "open door," "sit there," "stand up."	*4) • uses paper towel to wipe table;* *• hands flashlight to me on request;* *• attempts to open door but needs assistance to physically complete task* *• stands up on request (then starts jumping)*

Key: A = Assistant Teacher

Structured Interaction Form, continued

Evaluator's Comments, Activities, or Setting Events	Individual's Specific Behaviors, Responses, or Comments
5) Cause - Effect Objects include flashlight, switch-activated light box, switch-activated fan.	5) • turns on flashlight independently (shakes in front of eyes - no protest when I take it away) • Needs hand-over-hand assistance to turn on fan (by pressing on switch) - then turns on independently and smiles • Uses same switch as above to turn on light box independently.
6) Indicating Choice: Asked which she wants when presented with 2 objects • flashlight $ pen • fan $ ball I take fan away after 30 seconds & ask if she wants "more."	6) Directly selects preferred objects (does not sign object name) • picks flashlight • picks fan → signs "more" when fan is taken away - smiles when it is given back & turns it on again.

Score Sheet

Directions

As described in *Step 2: Scoring the Dimensions*, this tally sheet is designed to rate the individual's communication behaviors from each of the six dimensions. In the space below each dimension, write an example of the individual's behavior. Circle the rating which most closely corresponds to the individual's communication behaviors. Sum the ratings and calculate a total score. Write the score in the space marked "Total Score." This score will be used in *Step 4: Identifying the Range of Intervention Goals*.

Dimension: **Rating:**

1. Symbol Use 1 2 (3) 4 5

Uses some signs spontaneously to indicate basic needs & desires ("more," "cookie," "drink" "help," "flashlight," "jump," "ball," "milk"). Object cues for calendar box

2. Intent 1 (2) 3 4 5

Occasionally initiates need for help by signing "help." Spontaneously uses some signs ("more," "jump," "eat") and physical behaviors (pushing away unwanted objects, but not necessarily directed toward anyone).

3. Complexity 1 (2) 3 4 5

Mostly uses single signs. Occasionally uses 2-word sign combinations (e.g., "more drink," "more cookie"). Needs prompt for 3-word combinations.

4. Social Action 1 (2) 3 4 5

Responds to questions with appropriate answers (e.g., signs "more drink" when asked if she wants a drink); does not typically initiate an interaction.

5. Vocabulary Use 1 2 (3) 4 5

Can sign categories of items in response to questions [e.g., food items ("cereal," "cookie"), drink items ("juice," "milk," "soda"), preferred activities ("jump," "flashlight")].

6. Comprehension 1 2 (3) 4 5

Follows 1-step directions ("stand up," "wipe table," "give me"); knows routines (e.g., puts away juice container in refrigerator; puts lunch tray on counter).

Total Score 15

Lowest possible score = 6; highest possible score = 30

Descriptive Profile

Use this page to integrate and synthesize the information from the six dimensions. Write a description of the student's overall communication behaviors, as described in Step 3: Generating a Communication Profile. The purpose is to provide a cohesive picture of the breadth and range of skills observed in the student. Attach other pages if necessary

Marie was observed across several settings including the classroom, lunch, and recess. Across these settings, Marie exhibited different forms of expressive communication, such as the use of single signs and object cues to make her needs and desires known. Marie's teacher, assistant teacher, and some of her classmates use simple sign language, including hand-over-hand signing, to communicate with her.

Marie is able to use some symbols and clearly understands the relationship between signs and object cues, and the objects or actions they represent. She uses signs to communicate immediate needs such as "more drink," "finished," "help," and "jump." Marie also uses some object cues with a calendar box as a way of representing her daily schedule and for making choices regarding different activities (e.g., mini-violin to represent music class; small plastic ball for gym class).

While Marie rarely initiates sign communication on her own, communicative intent is apparent in that she spontaneously indicates certain needs and desires through physical behaviors (e.g., pushing away a plate of food when she is not hungry; smiling when she enjoys an activity). Most often, Marie's expressive signing is in response to a question or cue from the person working with her. However, she also uses some signs independently and purposefully. For example, she seems to understand that when she makes the sign for "help," it will be followed by an action.

The complexity of Marie's expressive communication is mostly in the form of single signs. However, she has made progress in the use of spontaneous two-word combinations, including "more cookie" and "eat cookie." Marie is sometimes physically prompted by her teacher to make three-word combinations (e.g., "want cookie please"). Most of the combinations of signs that Marie uses appear in very specific contexts, such as when she desires more food.

Marie's social interactions with peers typically are brief and fleeting. Her peers often tend to provide assistance during an activity or attempt to stop Marie from engaging in repetitive behaviors (e.g., by holding her hands when she waves her fingers in front of her eyes). Marie does not often attend to what is happening in the social environment, but instead exhibits interest in several different physical behaviors which include finger flicking, light gazing, and jumping.

Descriptive Profile, continued

While it is often possible to redirect her behavior, Marie nevertheless has little sustained involvement in communicative and social activities with her classmates. In addition, Marie's attention span in the classroom is very brief, and while she does not disturb other students, her degree of meaningful participation appears limited.

Marie's expressive sign vocabulary consists of several single signs (e.g., "cookie, "drink," "help," and "more"). She uses this vocabulary reasonably well, as is evident when she responds appropriately to questions using single signs (e.g., signing "finished" when asked if she is all done with lunch). In addition, her vocabulary use has been noted to include higher order cognitive skills such as categorical thinking (e.g., producing signs within specific categories such as food and drink). Her teacher noted that Marie has also demonstrated an ability to engage in mental problem solving such as putting objects from the calendar box into the "finished" box as a way of rejecting an undesired activity.

Finally, it was noted during this evaluation that Marie is also able to anticipate the steps for simple multistep routines such as returning juice to the refrigerator in the classroom and putting away her lunch tray in the cafeteria. At times, when she is focused, her comprehension is quite good and she is able to complete an entire sequence independently. She appears to have an adequate understanding of simple directions or requests presented to her during the context of different activities. For example, when given several different one-step commands (e.g., "Give me _____," "Sit," "Stand," "Wipe table"), she demonstrates an ability to follow these directions without the need for any prompts.

References

Mar, H.H., & Sall, N. (1999). Profiles of the expressive communication skills of children and adolescents with severe cognitive disabilities. Education and Training in Mental Retardation and Developmental Disabilities, 34(1), 77-89.

Wetherby, A.M., Warren, S.F., & Reichle, J. (Eds.). (1998). Transitional prelinguistic communication. Baltimore: Paul H. Brookes.

Dimensions of Communication

Recording Booklet

Harvey H. Mar, Ph.D
Nancy Sall, Ed.D

General Information

Name: _____ Date of Birth: _____

Age: _____ Sex: _____ Date of Evaluation: _____

School: _____ Grade/Class: _____

Evaluator : _____

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703 Main Street, Xavier 6
Paterson, NJ 07503

Background Information

Medical Condition or Diagnosis: _____

Other Disabilities: _____

_____

Degree of Mental Retardation: _____

Cognitive Skills (form of assessment; dates): _____

_____ _____

_____

Primary Mode of Expressive Communication: _____

Augmentation (yes/no, if yes, describe): _____

Educational Setting: _____

_____

Therapy (OT, PT, Speech/Language sessions per week): _____

_____

_____

Additional Information (e.g., educational goals; behavior concerns): _____

_____

_____

_____

_____

_____

Observation Form

Setting: _____ Date: _____

Peers Present (how many): _____ Start Time: _____

Others Present (e.g., 1:1 assistant): _____ End Time: _____

Activity/Stimulus	*Behavior/Response*

Observation Form

Setting: _____ Date: _____

Peers Present (how many): _____ Start Time: _____

Others Present (e.g., 1:1 assistant): _____ End Time: _____

Activity/Stimulus	*Behavior/Response*

Observation Form

Setting: _____ Date: _____

Peers Present (how many): _____ Start Time: _____

Others Present (e.g., 1:1 assistant): _____ End Time: _____

Activity/Stimulus	*Behavior/Response*

Interview Form

Person Interviewed: _____ Date: _____

Relationship to Individual: _____

Start Time: _____ End Time: _____

1. How does the individual spontaneously communicate needs and interests (.e., forms of communication)? How does s/he ask for something specific (e.g., drink, toy, book)?

2. What are the individual's most typical comments or requests? Give examples of exactly what the individual says or does.

3. How does one best communicate with the individual? (e.g., Speech? Sign Language? Gestures? Combinations of forms?)

4. Most of the time, will the individual use single words, two-word sentences, or lengthier sentences?

Interview Form, continued

5. Describe how the individual interacts with others.

6. Describe how well developed or extensive the individual's vocabulary is.

7. Can the individual correctly respond to commands? Provide specific examples of typical commands.

8.

9.

Structured Interaction Form

Setting: _____ Date: _____

Peers Present (how many): _____ Start Time: _____

Others Present (e.g., 1:1 assistant): _____ End Time: _____

Evaluator's Comments, Activities, or Setting Events	Individual's Specific Behaviors, Responses, or Comments

Structured Interaction Form, continued

Setting: _____ Date: _____

Peers Present (how many): _____ Start Time: _____

Others Present (e.g., 1:1 assistant): _____ End Time: _____

Evaluator's Comments, Activities, or Setting Events	**Individual's Specific Behaviors, Responses, or Comments**

Score Sheet

Directions

As described in Step 2: Scoring the Dimensions, this tally sheet is designed to rate the individual's communication behaviors from each of the six dimensions. In the space below each dimension, write an example of the individual's behavior. Circle the rating which most closely corresponds to the individual's communication behaviors. Sum the ratings and calculate a total score. Write the score in the space marked "Total Score." This score will be used in Step 4: Identifying the Range of Intervention Goals.

Dimension:	Rating:
1. Symbol Use	1 2 3 4 5
2. Intent	1 2 3 4 5
3. Complexity	1 2 3 4 5
4. Social Action	1 2 3 4 5
5. Vocabulary Use	1 2 3 4 5
6. Comprehension	1 2 3 4 5

Total Score _____

Lowest possible score = 6; highest possible score = 30

Descriptive Profile

Use this page to integrate and synthesize the information from the six dimensions. Write a description of the student's overall communication behaviors, as described in Step 3: Generating a Communication Profile (*Page 13*). The purpose is to provide a cohesive picture of the breadth and range of skills observed in the student. Attach other pages if necessary.

Descriptive Profile, continued